Broadening Participation in Computing Plan
Computer Science Program, Department of Mathematics and Computer Science
Alma College

Effective dates of plan: 1/1/21-5/31/23
Revision of plan will begin: 6/1/21
Contact: Scott Dexter, Professor. dextersd@alma.edu

Context

Alma College is a coed, four-year, residential, undergraduate, private, liberal arts and sciences institution situated in rural central Michigan. Its student body numbers roughly 1,450, drawn from 30 states (primarily Michigan) and 15 countries. Women consistently constitute around 58% of our student body; racially, student demographics skew heavily (and historically) White. The College's current Strategic Plan includes steps to broaden the student body; one of the eight Goals is to "Build a holistic culture of inclusion on campus by utilizing [a] campus-wide diversity, equity, and inclusion assessment to gain a better understanding of the campus climate;... prioritize and implement next steps based on the assessment recommendations... to be implemented by December 2021."

The Computer Science (CSC) program at Alma is small: it is served by two full-time tenured/tenure-track professors, with additional support from our mathematics colleagues in the department. From 2012 through 2020, we graduated a total of 26 majors, 12 of whom double-majored, most commonly in math. Of those 26 recent graduates, only one identified as a woman, and all but one identified as White (we do not have racial/ethnic data for two of the 2012 graduates). Similarly, of our 16 current declared majors, just one identifies as a woman, and all but one identifies as White. Clearly, we have ample room for broadening our demographics. Fortunately, the Provost (who joined the College in 2018) is committed to improving recruitment and retention outcomes for under-represented students across STEM at Alma, as computer science is not the only STEM program with retention and student success challenges.

Goals

Over the next few years, we plan to establish basic structures and practices, both in the department and at the institution, that will support our long-term efforts to broaden participation. This work is entirely new on campus. As we begin, all activities described in this plan are being overseen by Scott Dexter, with the hope of recruiting support from other faculty, staff, and students.

1. **In Fall 2021, produce** a comprehensive and repeatable **report** on the current (and historical) state of the demographics of the "student success pipeline" in CSC at Alma, from recruitment to graduation.
2. **Develop** the program's **faculty capacity** for analyzing curricular and pedagogical structures for their impact (positive or negative) on broadening participation in computing.
3. **Expand networks of support** for broadening participation initiatives, identifying resources both on campus and beyond.
4. **In Spring 2022, draft a recruitment plan** for female and underrepresented students who plan to major in CSC.

Activities and Evaluation

Produce a Report
1. With the help of the Offices of the Provost and Institutional Research, gather current and historical data on student success at the course level.
2. With the help of Admissions, gather data on demographic data on prospective students with stated interest in computer science.
3. Join the "Data Buddies" program and gather data on the current student experience.
4. With these data sources, as well as IPEDS data on peer and regional institutions, in Fall 2021 write and disseminate a report on the CSC student success pipeline.

Metrics: Completion of the report; breadth of dissemination and response to the report; number of students participating in Data Buddies.

Develop Capacity
1. Both program faculty have committed to participating in the Cultural Competence in Computing (C3) Fellows program being offered in winter 2021 by the [Identity in Computing Group](#) at Duke University. The primary activities of the program are

   Intensive study of topics such as identity, intersectionality, and systemic disparities to form the basis for understanding historical trends that impact current computing cultures as well as technology development.

   Development of new undergraduate/graduate courses and/or modules within existing courses, as well as other departmental activities that better attract, retain, and support students and faculty.

Metrics: Completion of the C3 program; implementation of practices learned.

Expand Networks
1. The College will become a member of NCWIT in early 2021.
2. The CSC program will develop and deepen its relationships with other campus entities whose missions align with BPC, especially the Office of Diversity and Inclusion, the Diversity and Inclusion Advisory Board, and appropriate student organizations.

Metrics: Number of engagements with NCWIT resources, meetings, webinars. Number of BPC-related engagements with campus entities.

Draft Recruitment Plan
1. Share the report produced as Goal 1 with the Office of Admissions.
2. With the Office of Admissions, review NCWIT recruitment resources, with particular emphasis on general recruitment of undergraduates and developing pipelines with community colleges.
3. With Admissions and the Office of Communication and Marketing, revise the CSC's program's messaging to more effectively support BPC initiatives.
4. With Admissions and Communication and Marketing, draft a recruitment plan for women and underrepresented students who plan to major in CSC.

Metrics: New/revised CSC recruiting practices and materials based on best practices for recruiting women and underrepresented students.